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BORANG PENGESAHAN STATUS TESIS♦

JUDUL: CAR LOCK INDICATOR

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CAR LOCK INDICATOR

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This thesis is submitted as partial fulfillment of the requirements for the award of the
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LIST OF ABBREVIATION

LED	-	Light Emitting Diode
LCD	-	Liquid Crystal Display
uC	-	Microcontroller
PC	-	Personal Computer
Tx	-	Transmitter
Rx	-	Receiver
RAM	-	Random Access Memory
ROM	-	Read Only Memory

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ABSTRAK

Pada hari ini, kereta telah menjadi salah satu mod pengangkutan yang popular kerana kebanyakan rakyat Malaysia mampu untuk memilikinya. Terdapat banyak pilihan kereta di pasaran sekarang, daripada kereta bajet sampailah kepada kereta mewah, dan ianya cuma bergantung kepada kemampuan. Satu daripada aspek penting sesebuah kereta adalah keselamatan kerana kecurian kereta adalah jenayah yang berlaku di seluruh dunia, termasuklah Malaysia. Buat masa sekarang, pembuat kereta tempatan di Malaysia memberikan sistem keselamatan piawai untuk setiap kereta yang dihasilkan, iaitu sistem kunci berpusat dan penggera kereta piawai. Fokus sekarang adalah kepada sistem penguncian kereta, di mana remot konvensional untuk sistem penguncian kereta biasanya terdiri daripada dua butang, yang mana butang pertama adalah untuk fungsi kunci dan buka, dan butang yang kedua adalah untuk penggera kereta. Tiada penunjuk berfungsi menunjukkan status kunci kereta, yang berfungsi sebagai konformasi kedua kepada status kunci kereta. Di sinilah datangnya idea untuk memperbaharui sistem kunci kereta konvensional dengan meletakkan penunjuk yang berfungsi sebagai konformasi kedua untuk status kunci kereta. Projek ini dinamakan sebagai Car Lock Indicator dan menggunakan pengawal-mikro Motorola MC68HC11A1 sebagai pusat kepada sistem. Untuk penunjuk, Diod Pemancar Cahaya (LED) adalah paling sesuai kerana ianya adalah murah, boleh dipercayai, penggunaan voltan yang rendah dan seterusnya memanjangkan jangka hayat bateri.

ABSTRACT

Nowadays, car has become one of the most popular modes of transportation because many of Malaysians could afford to have a car. There are many choices of cars in the market, from budget cars to the luxurious cars, only a matter now is affordability. One of the important aspects of a car is security because car theft is a crime that occurs all around the world, including Malaysia. Currently, local car manufacturers in Malaysia provides a standard security system for each car manufactured, that is central locking system and standard car alarm. The focus is on the car locking system, where the conventional remote for the car locking system is commonly consists of two buttons, which is the first, is for lock and unlock function and the second button is for the car alarm. There is no indicator that indicates the lock status of the car, acting as the double confirmation for the lock status. Here comes the idea to improve the conventional car lock system by adding an indicator to work as the second confirmation for the car lock status. The project is named as Car Lock Indicator and using microcontroller Motorola MC68HC11A1 as the heart of the system. For the indicator, Light Emitting Diode (LED) is the most suitable because it is cheap, reliable, low voltage consumption thus makes the battery could last longer.

CHAPTER I

INTRODUCTION

1.1 Background

This chapter explains the background of modern cars, the security of the cars, the car lock system and the introduction to the car lock indicator. Currently the car lock system is the main preventive measures taken to avoid car theft and the indicator is the device that alerts the car owner about the status of the car. This chapter also explains the overview of the Car Lock Indicator project, the objective of the project, the project scope and finally the research methodology to conduct the project.

1.1.1 The Modern Cars

There are many prestigious car manufacturers in the world manufacturing prestigious car for the automobile market in the world such as Mercedes-Benz, Honda, Bavaria Motor Works (BMW), Ferrari and many other car manufacturers. They have gone through many years of experience and so that their product is well known all over the world.

In Malaysia, we also have our very own car manufacturers like Proton and Perodua. They also have produced their own car model, like Proton come with it first Proton Saga then followed by Iswara, Satria, Wira, Perdana, Waja, and many other

improvement models and meanwhile Perodua comes with it first Kancil then followed by Kenari, Kelisa, Kembara, and finally MyVi. The technology in the automotive industry becomes more advance and competitive because the demands for performance, designs, safety, and price have been the concern among Malaysians.

1.1.2 The Security

Today, the security of the car has been an important matter. According to the statistics made by Polis DiRaja Malaysia (PDRM), the total numbers for the car theft that have been reported from year 2000 to year 2005 is 51,214. Below is the graph showing the figure of the cases divided into years from 2000 to 2005.

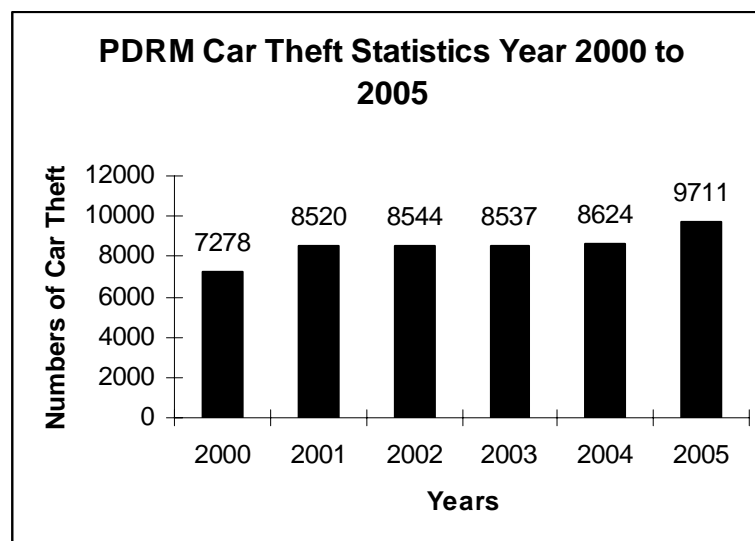


Figure 1.1: The increasing numbers of car theft in Malaysia.

There are many causes which can contribute for the car theft and one of them is the attitude of the car owner. The modern lifestyles have made people become rushing in doing everyday activities and sometimes they become careless and irresponsible to their own property, such as a car. Sometimes when people is rushing to do their daily chores they easily forget to lock their car and then uncertain about

their car have been locked or not. This could lead to the increasing figures of the car theft statistics.

1.1.3 Car Lock System

Car lock consists of the process of locking and unlocking process. There are several ways to lock and unlock the car such as:

- i) By using the Car Key.
- ii) By pressing lock or unlock button inside the car.
- iii) By using the combination lock on outside of the door.
- iv) By pulling up or pushing down the knob on the inside of the door.
- v) By using keyless-entry remote control
- vi) And by the signal from the control centre.

Meanwhile, the car lock system consists of the lock and unlocks mechanism, then the central lock mechanism and finally the car alarm mechanism. The conventional car lock system only provides minimal security features for the car. In order to improve the reliability of the car lock system, the Car Lock Indicator comes into the picture to act as a double-confirmation about the car status.

1.1.4 The Car Lock Indicator

As mentioned previously, the car lock indicator is a feature to improve the reliability of the car lock system by acting as the double confirmation about the car status. There are many electronic devices that could be used as an indicator and in this case LED is used as the indicator. LED is selected because this component is cheap, easy to find, reliable, need less maintenance, and small voltage consumption makes the battery life span longer.

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